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Amendment To The Claims

1. (Currently Amended) A method of using a computer for managing risk in a market related to a commodity delivered over a network, comprising the steps of:  
modeling locational prices of the commodity in the market as a linear combination of  
congestion prices for congestible lines in the network; and  
producing a combination of price risk instruments for the market in a proportion such that an  
effect of the congestion prices for the congestible lines on the locational prices of the  
commodity is reduced.

2. (Original) The method according to claim 1, wherein the step of producing the combination of price risk instruments includes producing the combination in a proportion such that the effect of the congestion prices for the congestible lines on the locational prices of the commodity is eliminated.

3. (Currently Amended) The method according to claim 2, wherein the step of producing the combination includes selecting a portfolio  $y$  of price risk instruments, such that:

$$z'A - y'P'A = 0,$$

where  $A$  represents distribution factors describing the physics of power flows in the network,  $P$  represents the available market of price instruments, and  $z$  represents a market participant's underlying position in the market at a prospective time  $T$ , and wherein the portfolio includes a set of positions to take financial advantage of particular market conditions or characteristics and primes denote transpositions.

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4. (Currently Amended) A portfolio derived by the method according to claim 3, wherein the portfolio includes a set of positions to take financial advantage of particular market conditions or characteristics.

5. (Currently Amended) A method of using a computer for evaluating a portfolio of price risk instruments in a market related to a commodity delivered over a network, comprising the steps of:

estimating a plurality of distribution factors indicating effects on one or more congestible lines in the network due to transfers of the commodity at respective locations in the network; and  
evaluating the portfolio based on the estimated distribution factors.

6. (Currently Amended) The method of claim 5, wherein the step of evaluating the portfolio includes the step of calculating a cost  $f$  based on the formula  $f = (z'A - y'P'A)\lambda + y'F$ , wherein:

$y$  represents the portfolio of price risk instruments;

$z$  represents underlying positions in the market at the prospective time;

$P$  represents a market of available price risk instruments;

$F$  represents prices for the available price risk instruments;

$A$  represents the distribution factors; and

$\lambda$  represents prices of congestion for the congestible lines; and

primes denote transpositions.

7. (Currently Amended) A method of using a computer for hedging a set of underlying positions at a prospective time in a market related to a commodity delivered over a network, comprising the steps of:

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estimating a plurality of distribution factors indicating effects on one or more congestible lines in the network due to transfers of the commodity at respective locations in the network; and  
producing portfolio of price risk instruments for the market based on the estimated distribution factors.

8. (Original) The method for hedging according to claim 7, wherein the step of producing the portfolio includes the step of eliminating an effect of congestion prices for congestible lines on prices of the commodity at respective locations in the network.

9. (Currently Amended) The method according to claim 7, wherein the step of producing the portfolio includes selecting a portfolio  $y$  of price risk instruments, such that  $z'A - y'P'A = 0$ , where  $A$  represents the distribution factors,  $P$  represents the available market of price instruments, and  $z$  represents the underlying position and primes denote transpositions.

10. (Currently Amended) A portfolio derived by the method according to claim 9, wherein the portfolio includes a set of positions to take financial advantage of particular market conditions or characteristics.

11. (Currently Amended) A method of using a computer for identifying arbitrage opportunities among a plurality of available price risk instruments in a market related to a commodity delivered over a network, comprising the step of:

estimating a plurality of distribution factors indicating effects on one or more congestible lines in the network due to transfers of the commodity at respective locations in the network; and

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producing a portfolio of price risk instruments from among the available price risk instruments based on the estimated distribution factors, wherein a number of the price risk instruments is greater than a number of the one or more congestible lines.

12. (Currently Amended) The method according to claim 11, wherein the step of producing the portfolio includes selecting a portfolio  $y$  of price risk instruments, such that  $y'P'A = 0$ , where  $A$  represents the distribution factors, and  $P$  represents the available market of price instruments and primes denote transpositions.

13. (Currently Amended) A portfolio derived by the method according to claim 12, wherein the portfolio includes a set of positions to take financial advantage of particular market conditions or characteristics.

14. (Currently Amended) A method of identifying arbitrage opportunities among a plurality of available price risk instruments in a market related to a commodity delivered over a network using a computer, comprising the step of:

modeling locational prices of the commodity in the market as a linear combination of congestion prices for congestible lines in the network; and  
producing a portfolio of price risk instruments from among the available price risk instruments in a proportion such that an effect of the congestion prices for the congestible lines on the locational prices of the commodity is eliminated, wherein a number of the price risk instruments is greater than a number of the one or more congestible lines.

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15. (Currently Amended) The method according to claim 14, wherein the step of producing the portfolio includes selecting a portfolio  $y$  of price risk instruments, such that  $y'P'A = 0$ , where  $A$  represents the linear combination, and  $P$  represents the available market of price instruments and primes denote transpositions.

16. A portfolio derived by the method according to claim 15 wherein the portfolio includes a set of positions to take financial advantage of particular market conditions or characteristics.

a 17. (Original) A computer-readable medium bearing instructions for managing risk in a market related to a commodity delivered over a network, said instructions being arranged to cause one or more processors upon execution thereby to perform the steps of:

modeling locational prices of the commodity in the market as a linear combination of congestion prices for congestible lines in the network; and producing a combination of price risk instruments for the market in a proportion such that an effect of the congestion prices for the congestible lines on the locational prices of the commodity is reduced.

18. (Original) A computer-readable medium bearing instructions for evaluating a portfolio of price risk instruments in a market related to a commodity delivered over a network, said instructions being arranged to cause one or more processors upon execution thereby to perform the steps of:

estimating a plurality of distribution factors indicating effects on one or more congestible lines in the network due to transfers of the commodity at respective locations in the network; and evaluating the portfolio based on the estimated distribution factors.

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19. (Currently Amended) A portfolio comprising: a plurality of price risk instruments for a market related to a commodity delivered over a network,

wherein the price risk instruments  $y$  are proportioned such that  $z'A - y'P'A = 0$ ,

$A$  represents distribution factors describing the physics of power flows in the network,

$P$  represents the available market of price instruments, and

$z$  represents a market participant's underlying position in the market at a prospective time  $T$ .

and

primes denote transpositions.

20. (Original) The portfolio of claim 19, wherein a number of the price risk instruments is greater than a number of the at least some congestible lines.